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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

STRZELECKA, TERESA E

ART UNIT PAPER NUMBER

1637

DATE MAILED: 04/03/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/847,513

Applicant(s)

DELONG ET AL.

Examiner

Teresa E Strzelecka

Art Unit

1637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-129 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-129 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

**DETAILED ACTION**

1. Claims 1 and 2 link(s) inventions I -XXX. The restriction requirement among the linked inventions is subject to the nonallowance of the linking claim(s), claims 1 and 2. Upon the allowance of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise including all the limitations of the allowable linking claim(s) will be entitled to examination in the instant application. Applicant(s) are advised that if any such claim(s) depending from or including all the limitations of the allowable linking claim(s) is/are presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

2. Claim 45 link(s) inventions XXXI- and LX. The restriction requirement among the linked inventions is subject to the nonallowance of the linking claim(s), claim 45. Upon the allowance of the linking claim(s), the restriction requirement as to the linked inventions shall be withdrawn and any claim(s) depending from or otherwise including all the limitations of the allowable linking claim(s) will be entitled to examination in the instant application. Applicant(s) are advised that if any such claim(s) depending from or including all the limitations of the allowable linking claim(s) is/are presented in a continuation or divisional application, the claims of the continuation or divisional application may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Where a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

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3. Since there is no evidence that the proteorhodopsin genes in claims 7-36 and 51-80 are related, each one of them was treated as a separate invention.

***Election/Restrictions***

4. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1, 2, 3-6, 37-44 and 7, drawn to a proteorhodopsin gene with SEQ ID NO: 4, classified in class 536, subclass 23.1.
- II. Claims 1, 2, 3-6, 37-44 and 8, drawn to a proteorhodopsin gene with SEQ ID NO: 8, classified in class 536, subclass 23.1.
- III. Claims 1, 2, 3-6, 37-44 and 9, drawn to a proteorhodopsin gene with SEQ ID NO: 10, classified in class 536, subclass 23.1.
- IV. Claims 1, 2, 3-6, 37-44 and 10, drawn to a proteorhodopsin gene with SEQ ID NO: 12, classified in class 536, subclass 23.1.
- V. Claims 1, 2, 3-6, 37-44 and 11, drawn to a proteorhodopsin gene with SEQ ID NO: 14, classified in class 536, subclass 23.1.
- VI. Claims 1, 2, 3-6, 37-44 and 12, drawn to a proteorhodopsin gene with SEQ ID NO: 16, classified in class 536, subclass 23.1.
- VII. Claims 1, 2, 3-6, 37-44 and 13, drawn to a proteorhodopsin gene with SEQ ID NO: 18, classified in class 536, subclass 23.1.
- VIII. Claims 1, 2, 3-6, 37-44 and 14, drawn to a proteorhodopsin gene with SEQ ID NO: 20, classified in class 536, subclass 23.1.
- IX. Claims 1, 2, 3-6, 37-44 and 15, drawn to a proteorhodopsin gene with SEQ ID NO: 22, classified in class 536, subclass 23.1.

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- X. Claims 1, 2, 3-6, 37-44 and 16, drawn to a proteorhodopsin gene with SEQ ID NO: 24, classified in class 536, subclass 23.1.
- XI. Claims 1, 2, 3-6, 37-44 and 17, drawn to a proteorhodopsin gene with SEQ ID NO: 26, classified in class 536, subclass 23.1.
- XII. Claims 1, 2, 3-6, 37-44 and 18, drawn to a proteorhodopsin gene with SEQ ID NO: 28, classified in class 536, subclass 23.1.
- XIII. Claims 1, 2, 3-6, 37-44 and 19, drawn to a proteorhodopsin gene with SEQ ID NO: 30, classified in class 536, subclass 23.1.
- XIV. Claims 1, 2, 3-6, 37-44 and 20, drawn to a proteorhodopsin gene with SEQ ID NO: 32, classified in class 536, subclass 23.1.
- XV. Claims 1, 2, 3-6, 37-44 and 21, drawn to a proteorhodopsin gene with SEQ ID NO: 34, classified in class 536, subclass 23.1.
- XVI. Claims 1, 2, 3-6, 37-44 and 22, drawn to a proteorhodopsin gene with SEQ ID NO: 36, classified in class 536, subclass 23.1.
- XVII. Claims 1, 2, 3-6, 37-44 and 23, drawn to a proteorhodopsin gene with SEQ ID NO: 38, classified in class 536, subclass 23.1.
- XVIII. Claims 1, 2, 3-6, 37-44 and 24, drawn to a proteorhodopsin gene with SEQ ID NO: 40, classified in class 536, subclass 23.1.
- XIX. Claims 1, 2, 3-6, 37-44 and 25, drawn to a proteorhodopsin gene with SEQ ID NO: 42, classified in class 536, subclass 23.1.
- XX. Claims 1, 2, 3-6, 37-44 and 26, drawn to a proteorhodopsin gene with SEQ ID NO: 44, classified in class 536, subclass 23.1.

- XXI. Claims 1, 2, 3-6, 37-44 and 27, drawn to a proteorhodopsin gene with SEQ ID NO: 46, classified in class 536, subclass 23.1.
- XXII. Claims 1, 2, 3-6, 37-44 and 28, drawn to a proteorhodopsin gene with SEQ ID NO: 48, classified in class 536, subclass 23.1.
- XXIII. Claims 1, 2, 3-6, 37-44 and 29, drawn to a proteorhodopsin gene with SEQ ID NO: 50, classified in class 536, subclass 23.1.
- XXIV. Claims 1, 2, 3-6, 37-44 and 30, drawn to a proteorhodopsin gene with SEQ ID NO: 52, classified in class 536, subclass 23.1.
- XXV. Claims 1, 2, 3-6, 37-44 and 31, drawn to a proteorhodopsin gene with SEQ ID NO: 54, classified in class 536, subclass 23.1.
- XXVI. Claims 1, 2, 3-6, 37-44 and 32, drawn to a proteorhodopsin gene with SEQ ID NO: 56, classified in class 536, subclass 23.1.
- XXVII. Claims 1, 2, 3-6, 37-44 and 33, drawn to a proteorhodopsin gene with SEQ ID NO: 58, classified in class 536, subclass 23.1.
- XXVIII. Claims 1, 2, 3-6, 37-44 and 34, drawn to a proteorhodopsin gene with SEQ ID NO: 60, classified in class 536, subclass 23.1.
- XXIX. Claims 1, 2, 3-6, 37-44 and 35, drawn to a proteorhodopsin gene with SEQ ID NO: 62, classified in class 536, subclass 23.1.
- XXX. Claims 1, 2, 3-6, 37-44 and 36, drawn to a proteorhodopsin gene with SEQ ID NO: 64, classified in class 536, subclass 23.1.
- XXXI. Claims 45-50, 81-87 and 51, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 4 by PCR amplification, classified in class 435, subclass 92.1.

XXXII. Claims 45-50, 81-87 and 52, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 8, classified in class 435, subclass 92.1.

XXXIII. Claims 45-50, 81-87 and 53, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 10, classified in class 435, subclass 92.1.

XXXIV. Claims 45-50, 81-87 and 54, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 12, classified in class 435, subclass 92.1.

XXXV. Claims 45-50, 81-87 and 55, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 14, classified in class 435, subclass 92.1.

XXXVI. Claims 45-50, 81-87 and 56, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 16, classified in class 435, subclass 92.1.

XXXVII. Claims 45-50, 81-87 and 57, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 18, classified in class 435, subclass 92.1.

XXXVIII. Claims 45-50, 81-87 and 58, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 20, classified in class 435, subclass 92.1.

XXXIX. Claims 45-50, 81-87 and 59, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 22, classified in class 435, subclass 92.1.

XL. Claims 45-50, 81-87 and 60, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 24, classified in class 435, subclass 92.1.

XLI. Claims 45-50, 81-87 and 61, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 26, classified in class 435, subclass 92.1.

XLII. Claims 45-50, 81-87 and 62, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 28, classified in class 435, subclass 92.1.

- XLIII. Claims 45-50, 81-87 and 63, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 30, classified in class 435, subclass 92.1.
- XLIV. Claims 45-50, 81-87 and 64, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 32, classified in class 435, subclass 92.1.
- XLV. Claims 45-50, 81-87 and 65, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 34, classified in class 435, subclass 92.1.
- XLVI. Claims 45-50, 81-87 and 66, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 36, classified in class 435, subclass 92.1.
- XLVII. Claims 45-50, 81-87 and 67, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 38, classified in class 435, subclass 92.1.
- XLVIII. Claims 45-50, 81-87 and 68, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 40, classified in class 435, subclass 92.1.
- XLIX. Claims 45-50, 81-87 and 69, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 42, classified in class 435, subclass 92.1.
- L. Claims 45-50, 81-87 and 70, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 44, classified in class 435, subclass 92.1.
- LI. Claims 45-50, 81-87 and 71, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 46, classified in class 435, subclass 92.1.
- LII. Claims 45-50, 81-87 and 72, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 48, classified in class 435, subclass 92.1.
- LIII. Claims 45-50, 81-87 and 73, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 50, classified in class 435, subclass 92.1.



- LIV. Claims 45-50, 81-87 and 74, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 52, classified in class 435, subclass 92.1.
- LV. Claims 45-50, 81-87 and 75, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 54, classified in class 435, subclass 92.1.
- LVI. Claims 45-50, 81-87 and 76, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 56, classified in class 435, subclass 92.1.
- LVII. Claims 45-50, 81-87 and 77, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 58, classified in class 435, subclass 92.1.
- LVIII. Claims 45-50, 81-87 and 78, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 60, classified in class 435, subclass 92.1.
- LIX. Claims 45-50, 81-87 and 79, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 62, classified in class 435, subclass 92.1.
- LX. Claims 45-50, 81-87 and 80, drawn to a method of retrieving a proteorhodopsin gene with SEQ ID NO: 64, classified in class 435, subclass 92.1.
- LXI. Claims 88-105, drawn to a light-driven energy generator comprising a proteorhodopsin protein, classified in class 250, subclass 493.1.
- LXII. Claims 106-123, drawn to a method of making a light-driven energy generator comprising a proteorhodopsin protein, classified in class 435, subclass 317.1.
- LXIII. Claims 124 and 125, drawn to a PCR apparatus for amplifying a proteorhodopsin gene, classified in class 435, subclass 283.1.
- LXIV. Claims 126-129, drawn to a method of designing PCR primers, classified in class 536, subclass 24.3.

The inventions are distinct, each from the other because of the following reasons:

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5. Inventions I-XXX and XXXI-LX are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the proteorhodopsin genes of Groups I-XXX can be obtained using an entirely different process, such as probe hybridization, rather than methods of Groups XXXI-LX.
6. Inventions I-XXX and (LXI, LXII) are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the generator of Groups LXI and LXII can be made using bacteriorhodopsin rather than proteorhodopsins encoded by genes of Groups I-XXX.
7. Inventions I-XXX and LXIII are related as apparatus and product made. The inventions in this relationship are distinct if either or both of the following can be shown: (1) that the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a different product or (2) that the product as claimed can be made by another and materially different apparatus (MPEP § 806.05(g)). In this case the apparatus of Group LXIII can be used to amplify an entirely different gene, such as interleukin, rather than proteorhodopsin genes of Groups I-XXX.
8. Inventions I-XXX and LXIV are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In

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the instant case the process of claim LXIV can be used with an entirely different gene, such as interleukin, rather than with proteorhodopsin genes of Groups I-XXX.

9. Inventions XXXI-LX and LXI are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are a method of making proteorhodopsins and a method of making a light-driven energy generator.

10. Inventions XXXI-LX and LXII are related as process of making and process of using the product. The use as claimed can be practiced with a materially different product, such as bacteriorhodopsin, therefore restriction is proper between said method of making and method of using.

11. Inventions XXXI-LX and LXIII are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the processes of Groups XXXI-LX can be practiced with a microfuge tube and a water bath, rather than with the apparatus of Group LXIII.

12. Inventions XXXI-LX and LXIV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are directed to methods with different method steps, starting materials and goals.

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13. Inventions LXI and LXII are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process of claim LXII can be used to make a light-driven energy generator comprising bacteriorhodopsin, rather than a light-driven energy generator of Group LXI.

14. Inventions LXI and LXIII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are different entities, with different components and functions.

15. Inventions LXI and LXIV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the light-driven energy generator of Group LXI is not required for the PCR method of Group LXIV.

16. Inventions LXII and LXIII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the PCR apparatus of Group LXIII is not required for making a light-driven energy generator by a method of Group LXII.

17. Inventions LXII and LXIV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the

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different inventions are directed to methods with different method steps, starting materials and goals.

18. Inventions LXIII and LXIV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the PCR apparatus of Group LXIII is not required for a method of PCR primer design of Group LXIV.

19. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

20. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

21. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa E Strzelecka whose telephone number is (703) 306-5877. The examiner can normally be reached on M-F (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached at (703) 308-1119. The fax phone numbers for the organization

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where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 305-3014 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

April 2, 2003

Teresa Strzelecka, Ph. D.

Patent Examiner

*Teresa Strzelecka*

*4/02/03*